

## Variance of magnetic properties of Hayachine ultramafic rock body in Tohoku District, Japan

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Serpentinite obtained crystallization remanent magnetization during serpentinization prior to uplifting crust, because of the random orientations from Mitsuishi serpentine belt, Hokkaido, Japan (Morijiri and Nakagawa, 2005). However, some examples of paleomagnetic directions aligned with rocks from the Kitakami Mountains, Japan has been reported. Inferred from geological studies might be suffered from contact metamorphism by intrusion of granite, after uplifting.

During study of the Geological map 1/50000 "Hayachine-San" (in printing), in the Hayachine ultramafic rocks, Kitakami Mountains, serpentinite samples for petrographic description were taken without orientation. Degree of serpentinization shows 30-80%, in southern than northern-central body, probably lower that percentage. Olivine is generally 1.2-2.0 mm in diameter which, replaced by serpentine along the cleavage and grain boundary. As well, the fine-grain containing beads of magnetite and fine metamorphic recrystallized olivine occur in the southern part. Serpentine occurs in the matrix of mesh-like texture, in fine vein with talc. Chromites are 0.3-1.0 mm in diameter and, been shown as a pseudomorph that subhedral in brown only internal or fully opaque. Often in the southern part, medium-grained (1.0-3.0 mm in length) tremolite with fascicular or tabular, and fibrous anthophyllite recrystallized, cut an original olivine texture. Appearances of metamorphic minerals are considered caused by thermal effect of Tono granodiorite body located in the South. Samples of the stuff in the same complex and slightly different distance from the Tono granodiorite think thermal metamorphic effects 13 more choice carried out various magnetization analysis of heat. In this case, not a paleomagnetic study, but can show examples of thermal magnetization curves of received heat contact metamorphic rocks.

Thirteen rock samples were collected without directions. Some pieces of these samples were measured. The natural remanent magnetizations (NRM) of pieces were measured using a pass-through cryogenic magnetometer (MODEL755R, 2G Enterprise). The alternating field demagnetization (AFD) of each piece was performed stepwisely starting from 0 to 100 mT at 5mT interval. The anhysteretic remanent magnetization (ARM) were also measured. The initial susceptibilities were measured using a susceptibility meter (KLY-3, AGICO). Hysteresis curve measurements at room temperature and thermo-magnetic analysis (Js-T curves) in a vacuum were done using the 0.1 to 0.2 g portion of each rock sample using a vibrating sample magnetometer (VSM, BHV-55L, RIKEN-Denshi).

Samples obtained from near granite were shown significantly different curves. This may be in effect of sulfide minerals, such as microscopic pentlandite in serpentinite, as described by Fujimaki and Yomogida (1986).

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